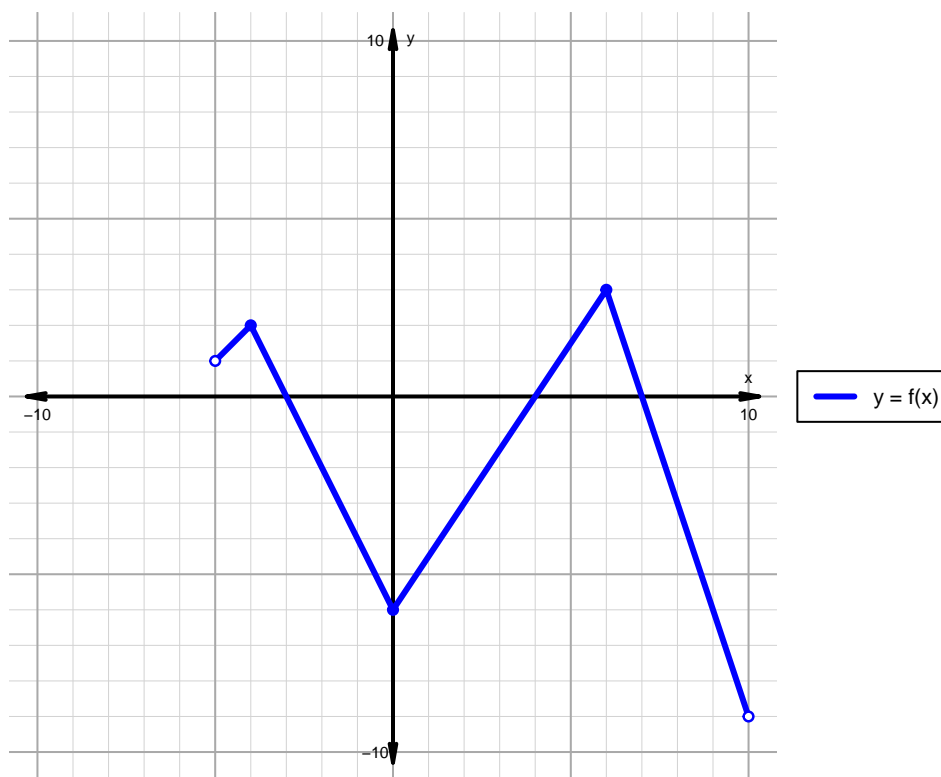


Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Intervals, Transformations, and Slope Solution (version 21)**

1. The function  $f$  is graphed below.

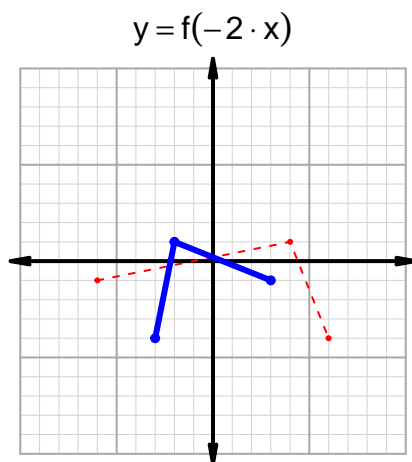
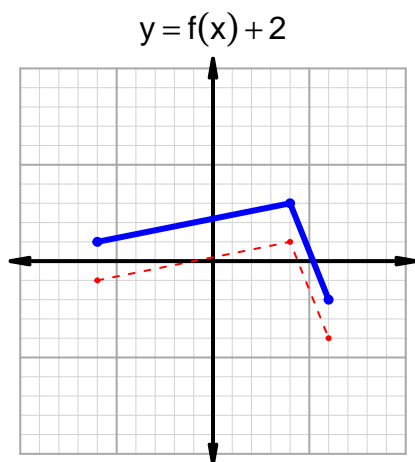
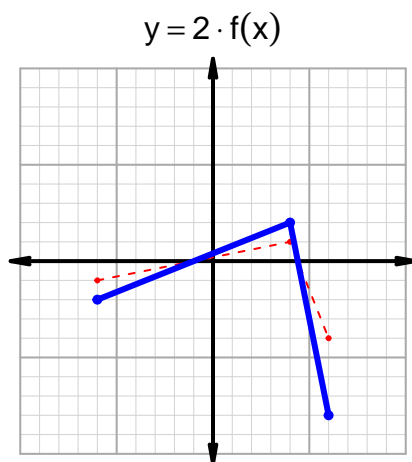
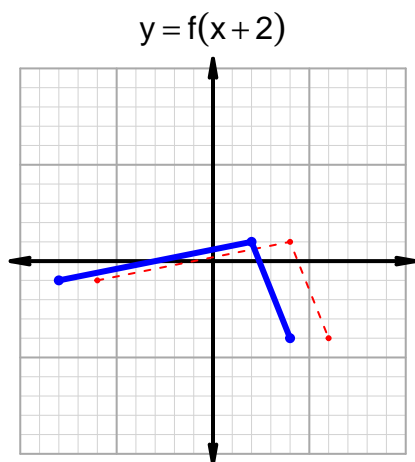


Indicate the following intervals using interval notation. Remember, you can use  $\cup$  between two intervals to indicate the union. Except for range, all intervals will indicate  $x$  values; this is standard.

Feature	Where
Positive	$(-5, -3) \cup (4, 7)$
Negative	$(-3, 4) \cup (7, 10)$
Increasing	$(-5, -4) \cup (0, 6)$
Decreasing	$(-4, 0) \cup (6, 10)$
Domain	$(-5, 10)$
Range	$(-9, 3)$

## Intervals, Transformations, and Slope Solution (version 21)

2. In the four graphs below,  $y = f(x)$  is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function  $g$  be defined by the table below. Use the formula  $\frac{g(x_2) - g(x_1)}{x_2 - x_1}$  to find the average rate of change between  $x_1 = 46$  and  $x_2 = 86$ . Express your answer as a reduced fraction.

$x$	$g(x)$
46	81
57	46
81	86
86	57

$$\frac{g(86) - g(46)}{86 - 46} = \frac{57 - 81}{86 - 46} = \frac{-24}{40}$$

The greatest common factor of -24 and 40 is 8. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-3}{5}$$